







.....

OF

Learn about Solar + Battery Storage



Thanks to our co-host



Learn more at www.operationfuel.org

Agenda

energy storage

- Batteries 101
- Why Does Connecticut Need Energy Storage?
- How Will Your Battery Perform?
- What Do Batteries Cost?
- Questions

Batteries 101

What are Home Batteries?



Refrigerator for size approximate comparison

GENERAC PWRE - ENPHASE ENPHASE

All batteries shown have a capacity of about 12-18 hours of home backup. Additional electrical equipment not shown.

How Do Solar Panels Work?



1. Solar Panels convert sunlight into electricity.

2. An **Inverter** converts the electrical power from the solar panels into the same type of electrical power used in your home and sends it into the **Main Breaker.**

When the sun is not shining, you buy electricity from the grid as usual.

3. Your house uses some of that solar power during the day and sends back any excess to the grid. Your electric company pays you for that power you send back in the form of credits on your electric bill.

Solar Panels Turn off During a Power Outage



Solar panels are not designed to power your home when the grid goes down! This is for two reasons:

- It is dangerous for your solar panels to put electricity on the grid when line workers may be fixing power lines.
- The power output from solar panels isn't steady enough to reliably run everything in your home (clouds, tree shading, etc.)

Solar + Home Batteries Stay Connected



You can charge your home battery using your solar panels, safely disconnect from the grid during a power outage, and run your home on battery power for several hours... and recharge using the sun!

When the grid goes down in a power outage, the solar panels and battery will automatically switch over to backup mode – no action needed from you!

What Can Home Batteries Power?



Nice to Have

Home Batteries vs Generators - Benefits

Low cost



SilentHNo fuel or emissionsNStore and use yourPsolar energyCOn standbyC

Incentives available

High output Mid-range price Plumbed fuel supply On standby

Home Batteries vs Generators - Drawbacks



No incentives



Why Does Connecticut Need Energy Storage?

1. Power Outages

CONNECTICUT POWER OUTAGES

Over 185,000 People in Conn. Still Without Power Days After Tropical Storm Isaias

Published August 8, 2020 • Updated on August 8, 2020 at 11:30 pm

LATEST HEADLINES

CT storm brings more than 100,000 power outages; Eversource says restoration could take days

(▼) (f) (f)

power when storms strike. But that doesn't have to happen. by Jan Ellen Spiegel

Best of 2020: CT keeps losing

December 30, 2020 @ 12:03 am

() 💟 🛅 🖬 🖶

Nor'easter could cause more than 155,000 power outages in CT, utilities predict

March 13, 2023 | Updated: March 13, 2023 8:36 p.m.

Eversource said on Saturday that

A prolonged nor'easter with strong winds that could last days is expected to cause more than 125,000 power outages in Connecticu Eversource says.

NEWS // WEATHER Nine hurricanes expected in the U.S. this season, report forecasts

May 23, 2022 | Updated: May 26, 2022 4:07 p.m.

iana Morga



A pedestrian crosses the street with an umbrella as Tropical Storm Henri hits Stamford, Conn. Sunday, Aug. 22, 2021. Henri was downgraded from a hurricane to a tropical storm as the storm took a turn eastward before hitting land.



g Main Street in Rocky Hill two of thousands of Connecticut

2. Electrification Demands Grid Services



2. Rising Costs and Emissions





How Will Your Battery Perform in Energy Storage Solutions?

Passive Dispatch

	Sunday 7/1	Monday 7/2	Tuesday 7/3	Wednesday 7/4	Thursday 7/5	Friday 7/6	Saturday 7/7
2:00 pm							
3:00 pm							
4:00 pm							
5:00 pm		Passive Dispatch	Passive Dispatch	Holiday	Passive Dispatch	Passive Dispatch	
6:00 pm							
7:00 pm							
8:00 pm							

Passive and Active Dispatch

	Sunday 7/1	Monday 7/2	Tuesday 7/3	Wednesday 7/4	Thursday 7/5	Friday 7/6	Saturday 7/7
2:00 pm					Active		
3:00 pm			Active Dispatch		Dispatch		
4:00 pm							
5:00 pm		Passive Dispatch	Passive Dispatch	Holiday	Passive Dispatch	Passive Dispatch	
6:00 pm							
7:00 pm							
8:00 pm							

Passive and Active Dispatch and Storm

	Sunday 7/1	Monday 7/2	Tuesday 7/3	Wednesday 7/4	Thursday 7/5	Friday 7/6	Saturday 7/7
2:00 pm							
			······		Active		
3:00 pm			Active				
4:00 pm							
5:00 pm		Passive Dispatch	Passive Dispatch	Holiday	Passive Dispatch	Storm	
6:00 pm							
7:00 pm							
8:00 pm							

What Do Batteries Cost?

energy storage

 Average system size:
 8 kW / 18 kWh

 Cost before incentives:
 \$31,500

 Upfront Rebate:
 \$3,600 to \$7,500

 30% Federal Tax Credit:
 \$7,200 to \$8,370

 10 Years of Performance Incentives:
 \$3,750 to \$5,900 (est)

Net Cost of Backup Power: \$9,730 to \$16,950

Talk to an Eligible Contractor to see what you qualify for!

Source: Energy Storage Solutions residential project data Jan 2022 - June 2023

Get Started

Energy Storage Solutions

- <u>www.energystoragect.com</u>
 - Find an Eligible Contractor
 - Learn about the Program
 - Explore program data
- Is your preferred contractor not on the list? Email us at <u>energystorage@ctgreenbank.com</u>

Questions?